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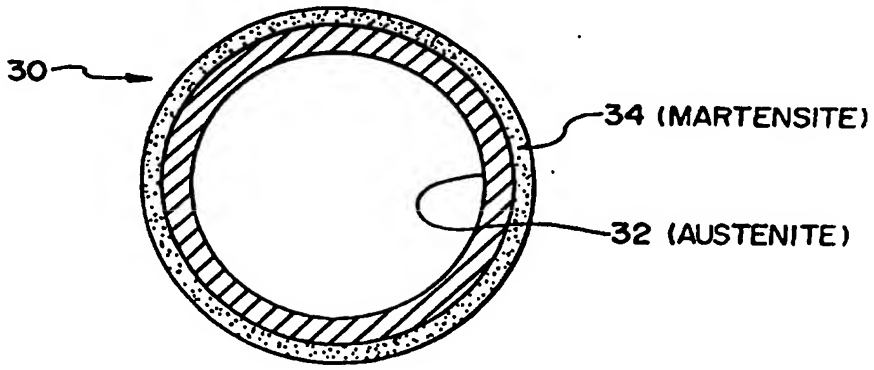
(54) Title: IMPROVED TISSUE SUPPORTING DEVICES

(57) Abstract

A new multiple component stent (10) which allows for initial self-expansion and subsequent deformation to a final enlarged size. In one embodiment, stent (10) comprises a first resilient element (12) and a second deformable element (14). In another embodiment, stent (30) is made of a first austenite component (32) and a second martensite component (34).



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AMENDED CLAIMS
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new claims 22-30 added; remaining claims unchanged (1 page)]

deployment diameter smaller than the predetermined fabricated diameter and upon transformation of the austenite phase portion from martensite back to austenite to self-expand the stent back to the austenite phase portion predetermined fabricated diameter at temperatures in excess of the transition temperature of the austenite superelastic portion, the shape memory of the superelastic austenitic portion tending to form the austenitic portions of the stent to the fabricated diameter parent shape due to its shape memory, with the martensitic portions remaining in the deployment shape, additional recovery back toward the stent fabricated diameter parent shape can be assisted by an external force deforming the martensitic portion without slip deformation to an enlarged stent diameter beyond that of the self-expanded austenitic portion diameter, but not greater than the stent fabricated diameter parent shape.

22. The stent of claim 20 wherein the alloy is a NiTi nitinol alloy.

23. The stent of claim 22 wherein the alloy compositions is about 50Ni/50Ti atomic weight percent.

24. The stent of claim 20 wherein the alloy is a cold worked alloy.

25. The stent of claim 20 wherein the alloy is NiTi (nitinol).

26. The stent of claim 20 wherein the alloy is a prestrained alloy.

27. The stent of claim 26 wherein the alloy is NiTi (nitinol).

28. The stent of claim 20 wherein the alloy exhibits cycle amnesia.

29. The stent of claim 28 wherein the alloy is NiTi (nitinol).

30. The stent of claim 21 wherein the two phase portions comprise a single alloy.